



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,285	10/31/2003	Toshiaki Nakahira	244611US2	8446
22850	7590	06/07/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MADDEN, GREGORY VINCENT	
			ART UNIT	PAPER NUMBER
			2622	
			NOTIFICATION DATE	DELIVERY MODE
			06/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)
	10/697,285	NAKAHIRA, TOSHIAKI
	Examiner	Art Unit
	Gregory V. Madden	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 31 October 2003.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-27 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-10, 12-18 and 22-27 is/are rejected.
 7) Claim(s) 11 and 19-21 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 31 October 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7, and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujii et al. (U.S. Pat. 6,853,401).

First, in regard to **claim 1**, the Fujii reference teaches a digital camera (digital camera 1) comprising an imaging device (CCD 303) driving by at least two kinds of drive modes (a normal mode and a thinning mode), an image display device (LCD 10) having a number of pixels (400 X 300) less than a number of pixels of the imaging device (1600 X 1200), and enlarging display setting device (enlarged display button 224) configured to enlarge a part of an area of a whole image (as shown in Fig. 20) obtained by the imaging device at a desired enlargement ratio and to display an enlarged image on the image display device, wherein one of the two kinds of drive modes (i.e. normal mode) for driving the image device is selected such that the resolution of the part of the area of the whole image to be enlarged

is greater than a resolution of the image display device. Please refer to Figs. 5, 8, and 9, and Col. 3, Line 52 – Col. 4, Line 63, Col. 6, Line 36 – Col. 7, Line 6, and Col. 9, Lines 5-56.

As for **claim 2**, the limitations of claim 1 are set forth above, and the Fujii reference further teaches an enlarging position designating device (cursor display position control unit 211g) configured to designate a desired position in an image displayed on the image display device (LCD 10), wherein the image displayed on the image display device is enlarged around the position designated by the enlarging display position designating device (211g). Please refer again to Col. 9, Lines 5-56.

Considering **claim 3**, the limitations of claim 2 are set forth above, and Fujii further discloses that the camera comprises a timing generator (timing generator 314) configured to generate clock signals to drive the imaging device (CCD 303), and a clock generator (timing control circuit 202) configured to change clock signals input to the timing generator to any desired frequency. See Fig. 5, Col. 5, Lines 11-19, and Col. 6, Lines 12-15.

Next, in regard to **claim 7**, the limitations of claim 1 are again set forth above, and Fujii teaches that the camera has a manual focus function (i.e. based upon an input operation by the user, focusing is performed on a given area within the image), and when the manual focus function is performed, an enlarged image is displayed on the image display device automatically, as is taught in Col. 9, Lines 5-56.

Regarding **claim 22**, as is similarly set forth with regard to claim 1 above, Fujii discloses a digital camera (digital camera 1) comprising an imaging device (CCD 303) driving by at least two kinds of drive modes (a normal mode and a thinning mode), an image display device (LCD 10) having a number of pixels (400 X 300) less than a number of pixels of the imaging device (1600 X 1200), means for enlarging part of an area of the whole image (enlarged display button 224 and as shown in Fig. 20) obtained by the imaging device at a desired enlargement ratio and for displaying an enlarged image on the image display device, wherein one of the two kinds of drive modes (i.e. normal mode) for driving the image device is selected such that the resolution of the part of the area of the whole image to be enlarged is greater than a

resolution of the image display device. Please refer to Figs. 5, 8, and 9, and Col. 3, Line 52 – Col. 4, Line 63, Col. 6, Line 36 – Col. 7, Line 6, and Col. 9, Lines 5-56.

As for **claim 23**, the limitations of claim 22 are set forth above, and Fujii reference further teaches means for designating a desired position (cursor display position control unit 211g) on the image displayed on the image display device (LCD 10), wherein the image displayed on the image display device is enlarged around the position designated by the means for designating (211g). Please refer again to Col. 9, Lines 5-56.

Finally, considering **claim 24**, the limitations of claim 23 are taught above, and Fujii discloses that the camera comprises a means for generating clock signals (timing generator 314) configured to drive the imaging device (CCD 303), and means for changing clock signals (timing control circuit 202) input to the means for generating clock signals (314) to a predetermined frequency. See Fig. 5, Col. 5, Lines 11-19, and Col. 6, Lines 12-15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 13, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fujii et al. (U.S. Pat. 6,853,401) in view of Tanaka et al. (U.S. Pat. 6,130,420).

Next, considering **claim 4**, the limitations of claim 3 are set forth above by the Fujii reference, but Fujii fails to specifically teach that when the selected drive mode is changed, a refresh rate of an image output from one frame of the imaging device is prevented from changing by changing a clock frequency

output from the clock generator. However, the Tanaka reference teaches a digital camera (electronic still camera) wherein when a selected drive mode is changed (e.g. from all-pixel read-out mode to thinned read-out mode), a refresh rate (or frame rate) of an image output from one frame of the imaging device is prevented from changing by changing a clock frequency (i.e. varying a driving frequency) output from a clock generator (timing generator 21). Please refer to Figs. 1, 6A, 6B, 8A, and 8B, Col. 4, Lines 43-58, Col. 6, Lines 4-61, and Col. 8, Line 4 – Col. 9, Line 15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the prevention of change in frame rate by changing a clock frequency output when drive mode is changed, as taught by Tanaka, with the changing of drive modes of Fujii. One would have been motivated to do so because, as Tanaka teaches in Col. 1, Lines 50-60, a refresh rate of an output image from one frame (or a frame rate) that is lowered translates into awkward and unnatural motions of pictures shown on the display unit, and any lowering of a driving frequency increases the vulnerability of the image sensing device to adverse effects of dark currents and smears. Therefore, an unchanged frame rate and a relatively constant or high clock frequency is desired for capturing natural images to be shown on the display device.

As for **claim 13**, the limitations of claim 4 are shown above, and Tanaka also teaches that the camera comprises a switch (selector 24) configured to switch a setting if the clock frequency output from the clock generator is changed or not when the selected drive mode (e.g. from all-pixel read-out mode to thinned read-out mode) is changed. Please refer to Fig. 1 and Col. 6, Lines 4-61.

Considering **claim 25**, the limitations of claim 24 are taught above by Fujii, and as is similarly shown with respect to claim 4, Fujii fails to specifically teach that when the selected drive mode is changed, a refresh rate of an image output from one frame of the imaging device is prevented from changing by changing a clock frequency output from the means for changing clock signals. However, the Tanaka reference teaches a digital camera (electronic still camera) wherein when a selected drive mode is changed (e.g. from all-pixel read-out mode to thinned read-out mode), a refresh rate (or frame rate) of an

image output from one frame of the imaging device is prevented from changing by changing a clock frequency (i.e. varying a driving frequency) output from a means for changing clock signals (timing generator 21). Please refer to Figs. 1, 6A, 6B, 8A, and 8B, Col. 4, Lines 43-58, Col. 6, Lines 4-61, and Col. 8, Line 4 – Col. 9, Line 15.

Finally, regarding **claim 26**, the limitations of claim 25 are set forth above, and as with claim 13 above, Tanaka also teaches that the camera comprises a switching means (selector 24) configured to switch a setting if the clock frequency output from the means for changing clock signals is changed or not when the selected drive mode (e.g. from all-pixel read-out mode to thinned read-out mode) is changed. Please refer to Fig. 1 and Col. 6, Lines 4-61.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al.

(U.S. Pat. 6,853,401) in view of Tanaka et al. (U.S. Pat. 6,130,420), further in view of Koide et al. (U.S. Pat. 6,870,566).

Next, in regard to **claim 5**, the limitations of claim 4 are taught above, and while Tanaka does teach that the clock frequency output from the clock generator is changed, Tanaka does not explicitly disclose that an exposure amount is prevented from changing by changing a number of electronic shutter pulses output to the imaging device. However, noting the Koide reference, Koide teaches a digital camera (image sensing unit 11) wherein when the clock frequency output from a clock generator is changed (i.e. when the CCD operating rate is changed from A Hz to B Hz), an exposure amount is prevented from changing by changing a number of electronic shutter pulses (electronic shutter value changed from Sf to Sx) output to the imaging device. Please refer to Figs. 5 and 6, and Col. 13, Line 7 – Col. 14, Line 45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the changing of electronic shutter pulses output to the imaging device during clock frequency change, as taught by Koide, with the changes in clock frequency output from the

clock generator, as taught by Fujii in view of Tanaka. One would have been motivated to do so because, as Koide teaches in Col. 3, Lines 8-13, changing the electronic shutter pulses output when the clock frequency is changed prevents overexposure of the image displayed on the LCD, thus providing a similar view to that which will be recorded on a recording medium.

As for **claim 6**, the limitations of claim 4 are again taught above, and the Koide reference also teaches that even when the clock frequency output from the clock generator is changed (i.e. when the CCD operating rate is changed from A Hz to B Hz), an exposure amount is prevented from changing by keeping a pulse interval between electronic shutter pulses output to the imaging device, as is again taught in Figs. 5 and 6, and Col. 13, Line 7 – Col. 14, Line 45.

Claims 8-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. (U.S. Pat. 6,853,401) in view of Ueno (U.S. Pub. 2001/0012072).

Next, considering **claim 8**, the limitations of claim 1 are taught above by the Fujii reference, and while Fujii does teach that the camera comprises a release button used for performing a shutter release operation for photographing (shutter button 8) and that the camera has an auto focus function (AF) (See Fig. 1 and Col. 3, Line 52 – Col. 4, Line 63, Col. 6, Line 36 – Col. 7, Line 6, and Col. 9, Lines 5-56), Fujii fails to show that the camera performs the shutter release operation while depressing the release button stepwise, and wherein when the release button is depressed at a first step (i.e. half press), an auto focus function is performed and an enlarged image is displayed on the image display device. However, noting the Ueno reference, Ueno teaches a digital camera comprising a release button (shutter-release button 1) used for performing a shutter release operation for photographing, wherein the digital camera has an auto focus function (in-focus confirmation) and performs the shutter operation while depressing the release button stepwise (two-stroke type shutter release button), and wherein when the release button (1) is depressed at a first step (i.e. pressed half-way), an auto focus function is performed and an enlarged

image is displayed the image display device (electronic viewfinder 8). Please refer to Figs. 4 and 7, as well as Paras. [0047] and [0054-0059]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the stepwise operation of the shutter button and the enlarged image display of the object to be focused, as taught by Ueno, with the auto focusing function of Fujii. One would have been motivated to do so because, as Ueno teaches in Para. [0005], the small display on the camera makes it difficult for an in-focus determination to be made by the viewer, and thus enlarging the area to be focused aides the user in such a determination. Further, by providing a stepwise release button to control the auto focus timing, the use of many buttons by the operator of the camera can be avoided, thus aiding in quick capture of a desired scene.

Regarding **claim 9**, again the limitations of claim 1 are set forth above, and Paras. [0056-0057] of the Ueno reference teach that a release button (shutter button 1) is used for performing a shutter release operation for photographing, wherein when the release button is depressed (i.e. pressed all the way), a whole image (image data representing the image of the subject) is recorded even though an enlarged image is displayed on the image display device.

In regard to **claim 10**, again the limitations of claim 1 are shown above, and Ueno further teaches that even though a first enlargement instruction is input to the enlarging display setting device (i.e. half-press), a maximum enlarged image (in focus confirmation image shown in Fig. 6) is displayed on the image display device under the condition that the selected drive mode is not changed. Please refer again to Paras. [0047] and [0054-0059].

Finally, considering **claim 12**, the limitations of claim 1 are set forth above, and Ueno teaches that when an enlargement instruction (i.e. half press) is input to the enlarging display setting device for a predetermined period of time or more (e.g. 1/60 of a second), the selected drive mode is changed (e.g. changed from full-pixel readout to downsampled readout) to another one of the drive modes. Please see Paras. [0047] and [0054-0059].

Claims 14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. (U.S. Pat. 6,853,401) in view of Tanaka et al. (U.S. Pat. 6,130,420), further in view of Kijima et al. (U.S. Pat. 6,700,610).

Next, in regard to **claim 14**, the limitations of claim 13 are taught above by Fujii in view of Tanaka, but the combination fails to teach that the camera comprises a power supply capacity checking device to check and detect a capacity of a power supply, wherein when the power supply capacity checking device detects that the capacity of the power supply is less than a predetermined value, the clock frequency output from the clock generator is not increased regardless of whether the switch switches the setting or not. However, noting the Kijima reference, Kijima teaches a digital camera having a power supply capacity checking device (battery checker 27) configured to check and detect a capacity of a power supply (e.g. a battery), wherein when the power supply capacity checking device detects that the capacity of the power supply is less than a predetermined value, the clock frequency output from the clock generator (i.e. output frequency from the signal generator 17) is not increased (i.e. from frequency f1 to frequency f2) regardless of whether the switch switches the setting or not. Please refer to Fig. 8 and Col. 11, Line 47 – Col. 12, Line 9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the power supply capacity checking device of Kijima with the digital camera of Fujii in view of Tanaka. One would have been motivated to do so because, as Kijima teaches in Col. 4, Lines 50-62, increasing the clock frequency output from a clock generator greatly increases the power consumption from the power supply, possibly resulting in stoppage of the system operation if the power supply reaches a low level. Thus, by checking the power supply capacity before increasing clock frequency, the user can be assured that the operation of the system will not cease solely due to a change in clock frequency.

As for **claim 27**, the limitations of claim 26 are taught above by Fujii in view of Tanaka, but as is similarly shown with respect to claim 14, the combination fails to teach that the camera comprises a

means for checking and detecting a capacity of a power supply (battery checker 27), wherein when the means for checking and detecting detects that the capacity of the power supply is less than a predetermined value, the clock frequency output from the means for changing clock signals is not increased regardless of whether the switch switches the setting or not. However, noting the Kijima reference, Kijima teaches a digital camera having a power supply capacity checking device (battery checker 27) configured to check and detect a capacity of a power supply (e.g. a battery), wherein when the power supply capacity checking device detects that the capacity of the power supply is less than a predetermined value, the clock frequency output from the clock generator (i.e. output frequency from the signal generator 17) is not increased (i.e. from frequency f1 to frequency f2) regardless of whether the switch switches the setting or not. Please refer to Fig. 8 and Col. 11, Line 47 – Col. 12, Line 9.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. (U.S. Pat. 6,853,401) in view of Yanai (U.S. Pub. 2003/0030737).

Next, regarding **claim 15**, the limitations of claim 1 are taught above by the Fujii reference, and while Fujii teaches that the drive modes include a draft mode (i.e. a thinning mode) and a frame mode (i.e. a normal mode), Fujii does not specifically disclose that the overall pixels of the imaging device are read out by dividing a frame of the imaging device into three fields in the frame mode (normal mode). However, noting the Yanai reference, Yanai teaches a digital camera having a draft mode (thinning-out mode) and a frame mode (high definition photographing mode), wherein the overall pixels of the imaging device are read out by dividing a frame of the imaging device into three fields in the frame mode (i.e. the first photographing mode, constituting the high definition photographing mode). Please refer to Paras. [0050-0060], [0069], and [0075-0076]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the three field read of Yanai with the frame mode readout of Fujii. One would have been motivated to do so because by reading out three fields of

Art Unit: 2622

imaging device in the frame mode, as opposed to only one or two fields, the highest resolution image obtainable by the image sensor is read out and stored, allowing the user to print, view, or process an optimal image.

As for **claim 16**, the limitations of claim 15 are set forth above, the Fujii reference teaches that image data to be enlarged and displayed on the image display device is thinned-out image data (See Col. 3, Line 52 – Col. 4, Line 63, Col. 6, Line 36 – Col. 7, Line 6, and Col. 9, Lines 5-56), while the Yanai reference teaches that images to be displayed on an image display apparatus such as an LCD or taken in from image data in one field out of three fields of the imaging device, as is set forth in Para. [0067].

¹⁷

Considering **claim 17**, again the limitations of claim 15 are taught above, and the Fujii reference teaches that image data to be enlarged and displayed on the image display device is thinned-out image data (See Col. 3, Line 52 – Col. 4, Line 63, Col. 6, Line 36 – Col. 7, Line 6, and Col. 9, Lines 5-56), while the Yanai reference teaches that images to be displayed on an image display apparatus such as an LCD or taken in from image data in the three fields (i.e. image data from any of the three fields) of the imaging device, as is set forth in Paras. [0063-0067].

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. (U.S. Pat. 6,853,401) in view of Yanai (U.S. Pub. 2003/0030737), further in view of Ueno (U.S. Pub. 2001/0012072).

Finally, considering **claim 18**, the limitations of claim 17 are taught by Fujii in view of Yanai above, but the combination fails to teach that when the digital camera performs a focus operation, the image data taken from the imaging device is enlarged and displayed as a still image for a predetermined period of time when the focus operation is completed. However, the Ueno reference teaches I Paras. [0056-0057] that when a focus operation is completed (i.e. when in-focus confirmation is completed), the image data taken is enlarged and displayed as a still image for a predetermined period of time (i.e. before

Art Unit: 2622

full image capture). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the enlargement and display of the image taken from the imaging device, as taught by Ueno, with the image data taken in three fields of the imaging device, as taught by Fujii in view of Yanai. One would have been motivated to do so because, as is taught by Ueno in Para. [0015], by enlarging and displaying a still image of the image data taken, the user can confirm that an in-focus image is to be permanently captured, as opposed to relying on an assumption that a displayed full image is in-focus.

Allowable Subject Matter

Claims 11 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In regard to claim 11, the prior art is not found to teach or reasonably suggest, in combination with the limitations set forth in claim 10, a digital camera wherein when a second enlargement instruction (i.e. a second press of the shutter button) is input to the enlarging display setting device, the selected drive mode (i.e. draft mode or frame mode) is changed to another one of the at least two kinds of drive modes.

As for claim 19, the prior art is not found to teach or reasonably suggest, in combination with the limitations of claim 18, that the image data taken from the image data in three fields is enlarged and displayed at a maximum enlargement ratio when there is no particular instruction for an enlargement ratio.

Claims 20 and 21 would be allowable based upon their dependence from claim 19, and the prior art also fails to teach that when image data is enlarged and displayed as an enlarged image, the enlarged image is changed while gradually decreasing enlargement ratio in accordance with an instruction.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Misawa (U.S. Pat. 6,700,607)

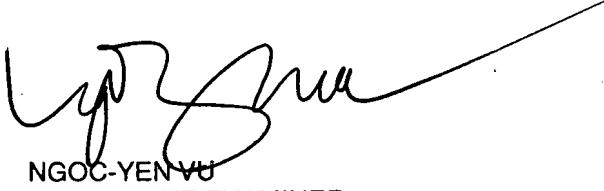
Mead et al. (U.S. Pat. 6,646,680)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
May 22, 2007



NGOC-YEN VU
SUPERVISORY PATENT EXAMINER